

# DESIGNING GROUND MOUNT SYSTEMS WITH **GROUND (SOIL/EARTH) SCREWS**



*The standard IronRidge Ground Mount System can be anchored using concrete foundations or ground screws.*

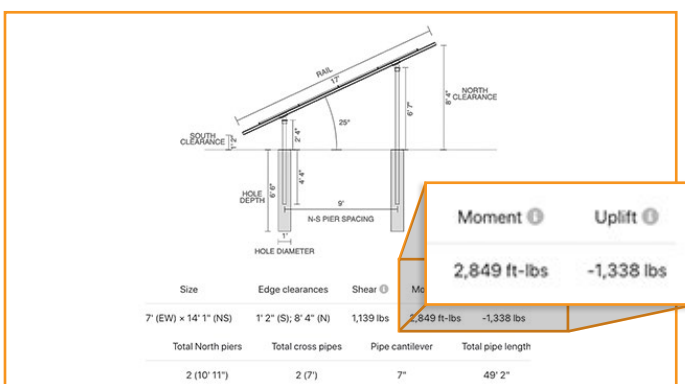
*This Tech Tip will help show you how to design and install a Ground Mount system using ground screws.*

## DESIGN ASSISTANT

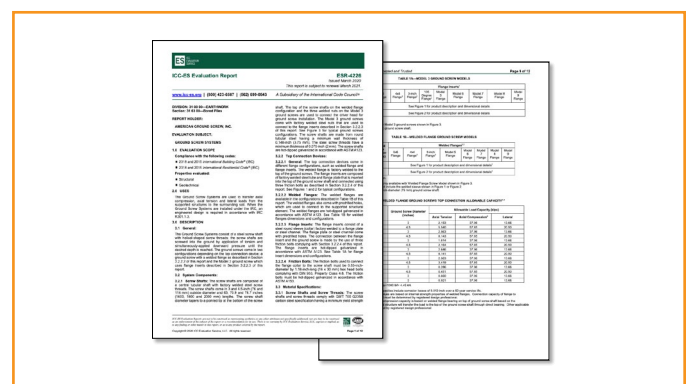
Utilizing a ground screw foundation begins by creating a project in the IronRidge [Ground-Based Design Assistant](#) with your site conditions and soil class. If you do not know your soil class, you can either contact your local AHJ, check online to see if a [soil survey report](#) is available for your area, or hire a geotechnical engineer to assess the site.

Certain sites may require a site-specific soil report or ground screw load testing. You also need to know your frost depth if you live in a climate with freezing temperatures. Ground screws must be long enough for their threads to be beneath the frost line, at the location the project is being installed.

Design Assistant will provide the span between piers, the quantity of ground screws and their respective length required for the project. Approved ground screw manufacturers are [Krinner North America](#) and [American Ground Screw](#), which can be purchased through your local distributor.



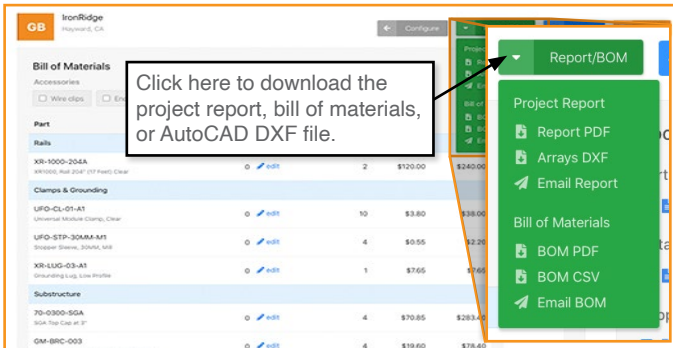
*Design Assistant Reaction Forces*



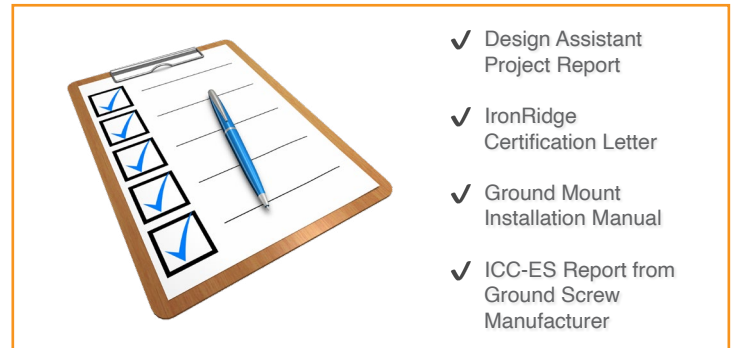
*American Ground Screw ICC-ES Report*

## INSTALLATION & PERMITTING DOCUMENTS

To connect the IronRidge Ground Mount System to your ground screw, you simply insert the downtube pipe into the top of the installed ground screw and tighten the hex head set screw to the appropriate torque. Krinner North America ground screws require 4 hex head set screws per ground screws and American Ground Screw requires 3 per ground screw.



*Design Assistant Project Documents*



*Minimum Documents to Provide AHJ*

The ground screw's inside dimensions are slightly larger than the pipe used in the system's substructure. For example, a 76mm (3" OD) ground screw can be used with 2" systems, while a 102mm or 114mm (4" OD) screw can be used with 3" systems. IronRidge Ground Mount can be built with either 2" or 3" schedule 40 pipe or mechanical tubing.

Within Design Assistant, IronRidge will provide you with many of the permitting documents that an AHJ may require, including a project document with array drawings, state certification letters, CAD blocks, and cut sheets. Please note that the IronRidge [Ground Mount Installation Manual](#) also serves as the official ETL listing document and includes a complete list of compatible PV modules.

Be sure to always check with your local AHJ (Authority Having Jurisdiction) about their requirements for permitting, which often vary by the jurisdiction of a particular region.

## FINAL NOTES

Always check with the ground screw manufacturer for installation instructions and use the IronRidge Ground Mount Installation Manual when assembling your array.

Ground Screw installation is typically done with a machine mounted hydraulic drive unit or handheld electric driver, depending on soil conditions.

To connect the IronRidge Ground Mount System to your ground screw, you simply insert the downtube pipe into the top of the installed ground screw and tighten the required number of hex head set screws to the appropriate torque.

